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OUTSTANDING ACHIEVEMENTS OF USSR SCIENTISTS IN THE FIELD OF MEDICINE

Prof A. Vishnevskiy

All scientiets mentioned in this report have been awarded Stalin Prizes for 1951, either individually or as members of the research teams to which they belong.7

It is noteworthy that after the combined session of the Academy of Sciences USSR and the Academy of Medical Sciences USSR devoted to problems of I. P. Pavlov's teaching, the proportion of investigations in the field of physiology which have been honored with Stalin prizes is increasing. These investigations are distinguished by their broad scope and audacity of execution.

Prof V. A. Negovskiy and his group, after thoroughly studying the immediate processes leading to death, have developed simple and effective methods of restoring the vital functions of a human organism. The procedure devised by them includes intravenous and intraarterial blood transfusion under addition of glucose and adrenalin. Artificial respiration is applied simultaneously. The work in question proves convincingly that the stages of agony and of clinical death of humans (resulting from a heavy traumatic injury or acute loss of blood) can be reversed in a number of cases.

Prof A. P. Nikolayev's work is devoted to the prevention of still births. In his monograph, "Prophylaxis and Therapy of Intrauterine Asphixiation of the Fetus," he discusses one of the most common causes of still births, insufficient supply of oxygen to the fetus. According to Professor Nikolayev's method, the mother's body is saturated with oxygen, whereupon the resistance of the brain cells of the fetus to oxygen starvation is increased by intravenous administration of glucose and ascorbic acid. Stagnation of circulation in the blood vessels of the brain is counteracted with cardiazol, which also stimulates respiration.

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Prof B. A. Petrov, the leading surgeon of the Scientific Research Institute imeni Sklifosovskiy, has worked extensively on surgical methods to be applied in cancer of the esophagus and of the cardia. He also devised an instrument of original design for joining the broken parts of the neck of a thigh bone in fractures. Petrov received a Stalin Prize for perfecting methods of free cutaneous plastic surgery in extensive injuries of the skin. Petrov's monograph dealing with this problem represents the results of many years of observations carried out on patients suffering from burns and traumatic injuries. In Petrov's work, the cardinal principle of USSR medicine, that of treating the patients rather than the disease, is readily apparent. This investigator established the nature of the principal stages for ing the series of severe pathological changes that develop in the organism of a person suffering from burns. Petrov demonstrated that transplantations of large unattached patches of skin cannot be successful unless the whole organism of the patient is treated and devised a system of treatment which involves saturating the patient's organism with proteins, blood, and salts. This method applied in combination with a perfected surgical technique involving the use of a new instrument (the dermatome) assures the success of the operation. The new technique for performing this operation is accessible to a wide circle of surgeons

Under participation of A. A. Bagdasarov, corresponding member of the Academy of Medical Sciences USSR, and Professors F. S. Vasil'yev, Kh. Kh. Vlados, F. P. Vinograd-Finkel', and A. N. Filatov, new methods of preserving blood and of producing therapeutic agents from blood were developed at the Central Institute of Hematology and Blood Transfusion and the Leningrad Scientific Research Institute of Blood Transfusion.

Of considerable interest is the work done by Prof A. N. Studitskiy and A. R. Striganova, Senior Scientific Associate, Institute of Animal Morphology imeni A. N. Severtsov, Academy of Sciences USSR, on the regeneration of skeletal muscles. The results obtained by Studitskiy and members of his group can be applied in surgery in the future.

USSR public health has been advanced thanks to investigations carried out by Prof N. A. Preobrazhenskiy. The work done by this scientist on the synthesis of physiologically active compounds is outstanding. The method of synthesizing pilocarpine which was developed by him was introduced into production. As a result, an effective domestic drug for the treatment of glaucoma became available to USSR ophthalmologists. Although emetine was isolated more than 150 years ago, its chemical constitution has been clarified and its synthesis accomplished only quite recently as a result of work done by Preobrazhenskiy. Important new work has also been done by this inveligator in connection with syntheses of colchicine, arecoline, cocaine, and vitamins and provitamins of the carotin group. In carrying out his investigations, Preobrazhenskiy concentrated on industrial developments leading to the synthesis of new drugs applicable in medicine.

Malaria as an endemic disease has been eliminated completely in a number of republics and oblasts of the USSR. Outstanding work in that connection was done by a large group of malaria specialists headed by P. G. Sergiyev, who developed and introduced into practice complex measures for combating this disease.

Work done by a group directed by V. D. Timakov, corresponding member Academy of Medical Sciences USSR, and Dr N. Ye. Lebedev led to drastic improvement of methods for the production of a number of therapeutic and prophylactic agents, as well as the development of new, highly effective therapeutic agents.

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